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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,764

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EXAMINER

CHARLES, MARCUS

ART UNIT

PAPER NUMBER

3656

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,764	<b>Applicant(s)</b> MAEDA ET AL.	
	<b>Examiner</b> Marcus Charles	<b>Art Unit</b> 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

This action is responsive to the amendment filed 5-27-2009, which has been entered  
Claims 1, 3, 5 and 6 are currently pending.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al. (5,848,846) in view of Lewis (2,383,727), Takemura et al. (6,332,714) and Willard et al. (3,370,898). Sugiyama et al. discloses a roller bearing comprising a plurality of rollers, a raceway member (1) is prepared from steel plate and is shape in the form of a cup having an inner raceway and two end portions (1a, 1b) to be bent; one end (1a) is bent inwardly to form a flange (1a) while the other end (1b) is kept straight in the axial direction, the entire raceway surface is subjected to hardening by carbonitriding and tempering by quenching in oil, the other end (1b) is annealed and soften to facilitate easy bending. Sugiyama et al. does not disclose the hardening is by induction hardening and tempering and the other end (1b) is bent without being hardened. Lewis discloses a bearing comprising a casing (10) in the form of a cup and having one bent end (12) and a lip (11) that is to be bent prior to hardening so that the metal can be bent and move into position more easily while still in relatively soft and to preventing crimping or irregularities (col. 2, lines 30-41). Therefore, it would be obvious

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to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the second end is bent before being hardened in view of Lewis so that the metal can be bent and move into position more easily while still in relatively soft and to preventing crimping or irregularities. Takemura et al. discloses a bearing comprising an outer raceway surface and inner raceway surface that are subjected to induction hardening and tempering so as to provide excellent cold drawability and improve wear resistance and extended life surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the hardening process is carried out by induction hardening in view of Takemura et al. so as to provide excellent cold drawability and improve wear resistance and extended life surface. In addition, the prior art to Sugiyama et al., Lewis (2,383,727) and Takemura et al. alone or in combination does not disclose that one of the annular collar is left unhardened after bending. Willard et al. discloses a roller radial thrust bearing comprising an annular outer race having a first bent lip (22) which is hardened and another bent portion (23) being left unhardened to facilitate bending. Therefore, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the Sugiyama et al. so that one collar is hardened after bending and the other collar is left unhardened after bending in view of Willard et al in order to facilitate bending and to be able to service the bearing without destroying the bearing race.

In claim 3, Sugiyama et al. discloses the outer race having a hardness of 750-800 Hv but fails to disclose the hardness of the inner race. Takemura et al. discloses

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the raceway surface after hardening is  $H_{RC}$  is 59 (which is equivalent to 727 Hv, and the hardness of the other surface is 78  $H_{RB}$  which is equivalent to 142 Hv. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the outer and inner races such that they have different hardness as set forth in the instant invention, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 f.2<sup>nd</sup> 272, 205

In claim 5, Takemura et al. clearly shows that the depth of the induction hardened portion is smaller than the plate thickness (see figs. 2).

In claim 6, Takemura et al. discloses the material for the raceway (20) contain from 0.4%-0.9% of Carbon.

### ***Citation***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the prior art cited in attached PTO Form 892.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 3 and 5-6 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Marcus Charles*

/Marcus Charles/

Primary Examiner, Art Unit 3656